County of Los Angeles
CHIEF EXECUTIVE OFFICE
713 KENNETH HAHN HALL OF ADMINISTRATION
LOS ANGELES, CALIFORNIA 90012
(213) 974-1101
http://ceo.lacounty.gov

WILLIAM T FUJIOKA
Chief Executive Officer

May 20, 2008

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

DEPARTMENT OF PUBLIC WORKS: REQUEST FOR APPROVAL TO PURCHASE A MOTOR GRADER (ALL SUPERVISORIAL DISTRICTS) (3 VOTES)

SUBJECT

This action is to approve the purchase of a replacement motor grader, which is a budgeted Fiscal Year 2007-08 Fixed Asset.

IT IS RECOMMENDED THAT YOUR BOARD:

Approve the Department of Public Works to acquire one replacement motor grader at an estimated cost of $310,000 budgeted in the Fiscal Year 2007-08 Internal Service Fund Fixed Asset Equipment appropriation.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of the recommended action is to comply with the County Equipment Policy (Policy) that your Board adopted on October 16, 2001. This Policy requires your Board's approval prior to County departments purchasing equipment with a unit cost of $250,000 or greater. Attached is a copy of the motor grader specifications.

This purchase is a replacement for a motor grader (Vehicle No. 47-095) that is estimated to cost $310,000. The replacement criterion for this equipment is 15 years or 7,500 hours of operation and this equipment is 20 years old with 10,093 hours. The

motor grader will be used to grade access roads, basin bottoms, and soft-bottom channels for proper drainage. Also, it is used for scraping the concrete channels to control the midge and mosquito population breeding in the algae, thus minimizing the threat of spreading the West Nile Virus.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs that we provide Service Excellence (Goal 1), Organizational Effectiveness (Goal 3), Fiscal Responsibility (Goal 4), and Community Services (Goal 6). The recommended action will enable the Department of Public Works (Public Works) to continue to provide County residents with enhanced, responsive, efficient, and cost-effective flood control maintenance.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund. The cost for this acquisition is estimated to be $310,000 and is included in the Fiscal Year 2007-08 Internal Service Fund Fixed Asset Equipment appropriation.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On October 16, 2001, your Board adopted a Policy whereby departments will obtain Board approval to purchase equipment with a unit cost of $250,000 or greater prior to submitting their requisitions to purchasing.

ENVIRONMENTAL DOCUMENTATION

In accordance with Section 15378(b)(4) of the California Environmental Quality Act (CEQA) Guidelines, approval of the recommended action does not constitute a project and, hence, is not subject to the requirements of CEQA.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The approval of this request will enable Public Works to continue to perform its routine flood maintenance activities in a more efficient and cost-effective manner. Your Board's approval will allow Public Works to replace outdated maintenance equipment and continue to provide flood maintenance services to County residents.

CONCLUSION

Please return two adopted copies of this letter to the Department of Public Works, Fleet Management Group.

Respectfully submitted,

WILLIAM T FUJIOKA
Chief Executive Officer

WTF:DDE
PM:jd

Attachment

c: County Counsel

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
FLEET MANAGEMENT GROUP
SPECIFICATIONS
SECTION A

FOR: **MOTOR GRADER**, conforming to the following specifications.

DEPARTMENT REQ. NO:	SPECIFICATION NO:
QUOTATION NO:	BUDGET NO(S) **139R (1) 2007-2008FS**
MAKE:	MODEL:
VENDOR NAME:	BID PREPARED BY:
ADDRESS:	PHONE:
SPECIFICATION BY: FRANK V. SOLANO	APPROVED BY: 3/27/08

IMPORTANT NOTE:

This specification MUST BE REVIEWED with your bid quotation. Failure to return a completed specification MAY VOID your bid.

The "BIDDER'S RESPONSE" page should be attached to the specification stating compliance with or proposed alternatives to specified details.

The page number, paragraph, and line should be referenced when deviating from the specification and must be included.

Exception: Vendors are required to complete the right-hand column of this specification. If taking no exceptions to the stated specifications, indicate so by writing "As Specified" for each specification. If taking exception to a specification, indicate by listing the exception information based on your product offering".

Bidders should note that specific warranty requirements are included in this specification.

This specification, when completed by the successful bidder and accepted by the County, becomes a part of the contract between the bidder and the COUNTY of LOS ANGELES.

LIQUIDATED DAMAGES:

Liquidated Damages: It is mutually understood and agreed that Vendor's failure to deliver on time [the equipment] will result in damages being sustained by County. It is also understood and agreed that the nature and amount of the damages will be extremely difficult and impractical to fix; that the liquidated damages set forth herein are the nearest and most exact measure of damages for such delay that can be fixed at this time; and that the liquidated damages are not intended as a penalty or forfeiture for Vendor's breach. Therefore, in the event that [the equipment] is delivered late, it is agreed that County may, in its sole discretion, assess against Vendor liquidated damages in the amount of cost equal to the daily rental rate of the equipment specified [ ] per monitoring report for each day until County has been provided with [the required equipment]. The liquidated sums specified represent a fair approximation of the damages incurred by the County resulting from the Vendor's failure to meet the delivery date for which an amount of liquidated damages is specified. The County's right to liquidated damages shall be in addition to an, not instead of all other remedies available to County, contractually, in law or in equity.

Should the successful bidder be obstructed or delayed in the work required to be done hereunder by changes in the work or by any default, act, or omission of the County or inability to obtain materials, equipment, or labor due to Federal government restrictions arising out of the defense or war program, then the time of completion shall be extended for such period as may be agreed upon by the County and the successful bidder.

Shall there be insufficient time to grant such extensions prior to completion date of the contract, the County may, at the time of acceptance of work waive liquidated damages which may accrued for failure to complete on time, due to any of the above, after hearing evidence as to the reasons for such delay and making a finding as to the cause of same.

In the event that the successful bidder is on strike at the time of the award of the bid, the County reserves the option to accept the first acceptable bid from a manufacturer that is not on strike.

COMPLIANCE WITH SPECIFICATIONS:

Compliance with the requirements of these specifications shall be evidenced by the manufacturer's data sheets published prior to issuance of these specifications, a copy of which shall be included with and made a part of the bidder's quotation.

Any exception to these specifications shall be specifically noted in the "BIDDER'S RESPONSE" column, adjacent to the appropriate item.

A bidder furnishing the equipment described in these specifications shall furnish evidence of similar equipment which has been in successful operation for a period of not less than two years in the continental United States. The unit, as specified, shall be of current year manufacture and shall be the manufacturer's standard advertised production model built in accordance with the top standards of the industry.

Modifying the unit or accessories to meet these specifications shall be construed as not offering the manufacturer's standard production model.

Acceptance of this equipment by the Department shall not waive the responsibility of the vendor to provide a unit that is in compliance with the specifications as bid. No part or parts defective in construction or deficient in any of the requirements of these specifications will be considered as accepted in consequence of the failure of any employee of the Department to point out said defects prior to the acceptance of the equipment by the Department.

It is deemed the responsibility of the bidder, as an expert in his field, to evaluate these specifications and bid a unit that is fully compatible with current industry standards.

Any subcontractor or supplier of attachments to this unit MUST be listed on the bid adjacent to the appropriate section.

REFERENCES:

References are listed to indicate the specific type, quality, function and/or durability of the item or items required. Bidders may offer superior or an approved equal product or item. The County will make the final determination on comparability of items offered. If the item or items offered is not comparable, the bidder shall provide the item specified or an approved equal at no additional cost.

AWARD CONSIDERATIONS:

The right is reserved to purchase equipment that, in Department's opinion, represents the best overall value. Consideration will be given to price, performance, operation, and maintenance cost, history of user satisfaction, and safety of operation.

The County requires delivery of this (these) units as soon as possible, but no later than 180 days from award of this bid. Delivery time will be considered in the bid award. Please enter the number of calendar days needed for delivery of the complete order:

_____ **Days.**

EXCEPTIONS:

Bidder may take exceptions to any part of this specification providing that a full and complete explanation of such exception is included in the bid.

ALTERNATIVES:

Bids on equivalent equipment will be considered provided that a full description and specification for the alternatives are submitted.

COMPATIBILITY OF COMPONENTS:

Bidder to guarantee that various component groups, including but not limited to, engine transmission and drive line-differential, to be compatible and allow the equipment/vehicle to perform in a safe and satisfactory manner.

PARTS AND SERVICE:

Due to emergency status of the Los Angeles County Department of Public Works, bidders to guarantee to maintain an adequate stock of spare parts.

If the bidder does not have spare parts available in the Los Angeles County area, it must be stated in the response column with estimated parts delivery time.

The bidder shall guarantee that parts prices will be as low as such parts are sold to any other user.

Vendor to guarantee that parts availability for this unit for a period of at least seven (7) years from date of manufacture.

IF VENDOR DOES NOT HAVE SERVICE FACILITIES IN LOS ANGELES COUNTY, approved major component service companies in the Los Angeles area, must be designated in the response column.

PRE-DELIVERY INSPECTION REQUIREMENTS:

The specified equipment/vehicle will not be accepted for delivery unless a pre-delivery inspection has been completed and approved by Public Works. To schedule a pre-delivery inspection appointment, contact (the Contract Manager) of Fleet Management Group at Los Angeles County Department of Public Works at (626) 458-7336 or (562) 869-9312 between the hours of 7:30 a.m. to 3:30 p.m. Monday through Friday. If the awarded vendor opts to request department representation that requires out of state travel, expenses other than meals and salary will be paid by the primary vendor. If out of state travel is requested, the awarded vendor must notify this office four (4) weeks in advance of the requested date. In addition to any other meetings, a final inspection will be conducted locally. At this meeting, Public Works division coordinator(s) will present a list of operators requiring training and the required criteria for user training will be established as well as a scheduled date for the training to be provided.

TRAINING & MANUALS REQUIRED:

- The awarded vendor will be required to provide up to eight (8) hours, as determined by Public Works, of training for the equipment. Training must be conducted by a qualified factory representative at a location that has been mutually agreed upon.

- The awarded vendor is responsible for providing Public Works a copy of the training materials in advance of the training session. Public Works will review the materials and provide the awarded vendor any required additions or changes to the material. The trainer shall send Public Works a completed sign in sheet for each training class that includes the printed names and signatures of all participants and trainees. These documents must be forwarded via certified mail to Fleet Management Group attn: Safety Coordinator, 900 S. Fremont Ave. , 7th floor, Alhambra, CA. 91802

- The awarded vendor shall provide a minimum of **two (2) sets** of operation and **three (3) sets** of repair manuals, complete color coded wiring diagrams and complete hydraulic diagrams. These may be provided on Compact Discs that are suitable for use on Public Works' personal computers.

INVOICES:

Vendor shall furnish the Department no-charge invoice for all work performed under warranty.

Each invoice shall itemize parts used and show all labor charges.

Invoices to be provided to the Department within seven (7) days of completion of repairs.

All invoices and billing to be mailed to: Los Angeles County Department of Public Works Fiscal Division, P.O. Box 7508 Alhambra, CA 91802-7508.

PAYMENT:

Payment will be with-held until the equipment /vehicle has been inspected and all terms of the specification have been completed.

The discount clock does not commence until the equipment has been accepted at our facility.

The Department will notify the vendor if any discrepancies are discovered or when the equipment meets specification and is accepted when possible.

DEPARTMENT'S LOCKOUT/BLOCKOUT STANDARDS:

Capability for lockout must include an opening for a lock at the main disconnects switch and/or valves. The valves shall be lockable after being bled. If the equipment, as supplied by its original manufacturer, does not provided for this capability, it must be provided with the necessary hardware to meet these requirement without compromising any safety or operational features of the equipment or machinery. Additionally, any equipment or machinery offered shall include permanent labeling of all lockout points. Bidder shall describe, as part of the bid submittal, a functional lockout tagout standard operating procedure describing how equipment or machinery is to be locked out and where it can be tagged out. The lockout devices needed to adhere to the standard operating procedure must be provided with the equipment or machinery, and it should be included in the bid price. Vendor must comply with the above standards, otherwise perspective bidders will be disqualified from this solicitation.

BIDDER MUST INITIAL AND DATE: _____

LICENSE PLATES:

Vendor shall make all necessary applications and complete all transfer documents. The awarded vendor to procure the CALIFORNIA exempts license plates.

The registered owner shall be shown EXACTLY as out-lined below, on all documents where the registered owner is listed.

LA County Dept. Public Works
900 S Fremont Ave
Alhambra, CA 91802-1460

Vendor shall supply one (1) certified weight certificate for each unit delivered.

PERFORMANCE TEST:

A Performance test at the expense of the bidder may be required for the purpose of final evaluation after the bids are received, to determine that the operating requirements of the Department of Public Works are met.

The date, time, site, and conditions of such test shall be selected by the Los Angles County Department of Public Works.

REVISITS:

VENDOR SHALL INCLUDE IN THE BID PRICE (if requested), the cost of a revisit to the equipment approximately thirty (30) days after it is placed in service. The revisit shall include the following:

Check all operating systems for proper operation and adjustment.

Check equipment visually for leaks and material defects.

Vendor shall notify the Department at least twenty-four (24) hours prior to the revisits.

GENERAL:

The equipment covered by these specifications shall be new and complete with all standard equipment and accessories. Any item or accessory not mentioned in this specification, but required for operation of the unit, must be itemized and included in the bid. Any component identified as standard equipment must be furnished at no additional cost.

The equipment shall conform in all respects to the Division of Industrial Safety Orders Cal/OSHA and California South Coast Air Quality Management District (SCAQMD). Plus any other pertinent regulations. **Bidder is required to furnish proof of certification/compliance at time of receipt of chassis or equipment to the outfitter or dealership. NO EXCEPTION.**

This equipment shall meet or exceed noise emission limits applicable to Federal and Cal / OSHA requirements for operators on (8) hours operation without hearing protection.

All separate units shall be installed and connected for operation.

Bidder shall furnish complete information on the equipment to be furnished. Information must include published literature indicating all standard and optional features.

Only new, current production models will be considered.

INTENT:

To Purchase **One (1) Motor Grader**, conforming to the following features and specifications;

Minimum 183HP, 34,856lb minimum Base Machine Weight, All Wheel Drive, Environmental cab, complete with forward scarifier, front scarifier assembly, 14 foot blade, equipped with all specified features and options. Grader must be complete, with a comprehensive package of specified performance features including with All Wheel Drive engaged a net flywheel power of at least 193HP in first gear Base HP engine, electronically controlled engine and transmission, blade strike protection, enclosed environmental cab, with sound reduction features.

BIDDER'S RESPONSE

BODY STYLE:

Environmental cab shall be a pressurized system, complete with mid- mounted scarifier, 14 foot blade, equipped with all specified features and options listed as follows.

OPERATING DIMENSIONS AND WEIGHT:

Height to top of ROPS Cab, shall be not exceed 10' feet, 3 inches.

Overall length, with ripper, shall be 34' feet.

Wheel base shall be 21' feet.

Machine length from counterweight to ripper shall not exceed 399 in (10,144 mm).

Front frame shall be a formed structural carbon steel tube, with a single, resistant welded seam.

The rear frame shall have two box section channels with an integrated bumper.

A standard rear hitch shall be provided.

BASIC WEIGHT DISTRIBUTION:

Front Wheels: 17,908 maximum
Rear Wheels: 32,967 maximum

OPERATING SPECIFICATIONS:

Top Forward speed: 27.4 MPH, minimum.

Top Reverse Speed: 21.6 MPH, Minimum.
Outside Turning Radius: 25.6 Ft.

BIDDER'S RESPONSE

OPERATING SPECIFICATIONS: (Cont.)

Steering cut (Left/Right): 50 degrees.

Articulation angle (Left/Right): 20 degrees.

ENGINE:

In accordance with So. Coast AQMD's Rule 1196, the Engine shall be certified by the California Air Resources Board as being _____
(http://www.arb.ca.gov/msprog/ccbg/2007pc.htm)

Diesel, 4-cycle, 6-cylinder, turbo-charged, Air to Air charge air Inter-cooler. **Engine shall develop, as standard, a rated net flywheel power of a least 183 HP (136 kW) in 1st gear, 188 HP (140 kW) in 2nd gear, 193 HP (144 kW) in 3rd gear, 198 HP (148 kW) in 4th gear through 8th gear.**

Variable Horsepower Plus shall be available to increase rated net flywheel power up to at least 203 HP (151 kW) in 5th gear, 208 HP (155 kW) in 6th gear, 213 HP (159 kW) in 7th gear, 218 HP (163 kW) in 8th gear.

Note: Enhanced engine emission requirements. The Department desires to equip all Diesel powered equipment with the cleanest emission technology available.

The unit offered must be equipped with a U.S. EPA Tier 3/ European Union Stage IIIa engine emissions shall be achieved without utilizing exhaust gas recirculation (EGR), or **approved after treatment**.

The unit offered must meet all performance specifications and incorporate a heavy duty emission reduction technology, capable of withstanding the rough environments encountered by Grader operations.

The engine must be **electronically controlled** with automatic, **electronically variable, H.P. output** rating for enhanced performance, fuel efficiency and maximum emission reduction.

BIDDER'S RESPONSE

ENGINE: (Cont.)

The engine shall be equipped with an electronic **engine over-speed protection** system.

Variable, electronically controlled, Horsepower **output** is required to increase H.P. in higher gears and reduce H.P. in lower gears where traction is limited, to reduce wheel slip and conserve fuel. The electronic control module must display engine status and faults to the operator.

The Grader control position must be equipped with a factory installed electronic status display indicating functional status of both grader systems and engine and transmission unit function. Status display to include the status and position of primary systems.

Warning indicators both visual and audible must indicate system problems.

Turbo charge Boost: No de-rating of horsepower shall be accepted below 10,000 feet of altitude.

Engine equipped with electronic over-speed protection.

Engine shall have replaceable wet-type cylinder liners and forged steel connecting rods.

Engine shall have direct-injection fuel system.

Engine cylinder head, hard alloy steel valve seats.

Pistons shall be aluminum alloy, cam-ground and tapered. Piston rings shall be 3-ring keystone design. Pistons shall be cooled by oil spray.

Engine bearings shall be of triple layer design: Steel based, heavy copper-bonded, aluminum faced.

Crankshaft shall be forged-steel and through-hardened on all journal surfaces.

Oil system shall be a pressure lubricated, (full-filtered), and cooled system.

BIDDER'S RESPONSE

ENGINE: (Cont.)

Engine shall automatically lower engine torque and alert the operator if critical conditions are detected.

Engine will increase its low idle speed to 1000 rpm when the battery voltage is below 24.5 volts for more than 5 minutes to ensure adequate system voltage and battery reliability

Engine shall be isolation/resilient mounted to minimize sound and vibration

Engine shall be completely cowled to protect components and minimize sound output. The cowl shall have dual full length piano hinges and dual point latches for security. Cowl access doors shall be of a louvered, screen backed design for maximum protection and cooling. Muffler shall be contained within the engine cowling.

THERMALLY CONTROLLED VISCOUS FAN COUPLER:

Engine driven thermally controlled viscous (hydraulic) fan coupling device to minimize drag and wasted horsepower.

Engine fan shall automatically adjust fan speed via a variable hydraulic fan pump to meet engine cooling requirements thus reducing demand on the engine, putting more horsepower to the ground, reducing noise, improving fuel economy, and reducing heat.

COOLING SYSTEM-RADIATOR:

Heavy duty radiator equipped with fully hinged screen clean-out access for clearing debris and other buildup around the radiator. 12.2 gallon capacity. Coolant overflow and Recovery tank plumbed to the radiator, to prevent coolant release into the environment. Radiator guard shall be provided.

BIDDER'S RESPONSE

ENGINE: (Cont.)

FUEL TANK:

Standard fuel tank capacity shall not be less than 110 gallons (416 L) capacity. Diesel fuel tank equipped with an easy access sediment drain sump. Fuel Tank fill must be lockable and easily accessible from ground level for safe servicing during extreme working conditions.

FILTERS:

Spin on replaceable filters for Fuel oil and coolant.

Fuel filter, full flow type with replaceable cartridge.

Fuel separator, with visible bowl and bleed off.

Electric Fuel priming pump.

Oil filter, full flow cartridge type. Engine oil cooler;
Oil capacity: 10.2 gallons.

Serpentine belt to have automatic tensioner.

Engine shall have a U.S. Forestry approved spark arresting device with lockable rain cap.

AIR CLEANER:

Air Filter; dry type radial seal with primary and safety elements. Restriction indicator, service indicator and automatic dust ejector

OIL DRAINS:

To be "Ecology" type drains plumbed for spill free oil changes. Drain system to be a plumbed hose type extending below the engine skid plate.

Minimum manufacturers oil change interval, 250 hours.

BIDDER'S RESPONSE

ELECTRICAL:

Alternator 150 AMP with solid state voltage regulator.

Two (2) batteries shall be 12-volt, negative ground, maintenance free with top-mounted posts. Shall have 200 amp-hour, 1400 CCA extra heavy-duty batteries available.

Batteries shall be mounted in a lockable steel battery box for security from theft and vandalism.

A 24 V to 12 V converter with 10-amp capacity shall be standard.

Electrical system shall have a master disconnect switch with a removable key (in addition to the ignition switch), accessible from the ground level.

Incandescent white reversing lamps and LED stop lamps shall be standard.

High and low bar headlights with front turn signals shall be available.

3 x 3 in (76 x 76 mm) halogen or 5 x 5 in (127 x 127 mm) mid-frame toe lights shall be available to illuminate moldboard and surrounding area.

3 x 3 in (76 x 76 mm) halogen or 5 x 5 in (127 x 127 mm) heel work lamps mounted underneath the cab shall be available.

3 x 3 in (76 x 76 mm) halogen or 5 x 5 in (127 x 127 mm) ripper work lamps shall be available.

Six 3 x 3 in (76 x 76 mm) halogen or six 5 x 5 in (127 x 127 mm) front mounted cab lights shall be available.

A yellow rotating beacon shall be available; vendor shall indicate make and model in bid.

Signal and light Guards shall be provided.

	BIDDER'S RESPONSE
TRANSMISSION:	
The transmission must be a direct drive system with **electronic control,** with over-speed protection power shift capability, **with shift optimization.** Transmission must be integrated with the electronic power management system and power train monitoring display.	
Transmission direction control shall be a 3-position rocker switch for selecting forward, neutral, and reverse incorporated into a single, 3-axis, multi-function, left-hand joystick control, as a standard feature	
Transmission gear selection shall be controlled by dual push buttons for up shifting and downshifting and shall be incorporated into a single, 3-axis, multi-function, left-hand joystick control, as a standard feature.	
Transmission direction and gear shifting shall be electronically and proportionally controlled from forward to reverse and from gear to gear for smoother shifts and better blade control as a standard feature.	
The rear-axle shall be a bolt-on modular design offering easy access to differential components, improving serviceability and contamination control.	
A load compensating system shall be standard to ensure consistent shift quality in all applications.	
Transmission shall not have less than 8 forward speeds and 6 reverse speeds.	
Transmission shall have 5 working gears between 0-10.6 mph (0-17 km/h), for dirt applications.	
Eight (8) speeds forward and six (6) reverse speeds. Grader to be equipped with an electronic shift optimization system for seamless automatic gear shifting, providing automatic gear shifts, at electronically optimized shift points.	
Differential Lock/Unlock shall be operator controlled, via a push-button, located on a single, 3-axis, multi-function, right-hand joystick control as a standard feature.	

BIDDER'S RESPONSE

TRANSMISSION: (Cont.)

Differential Lock/Unlock shall be electro-hydraulically controlled, as a standard feature.

Differential Lock/Unlock shall not have speed restrictions for engaging/disengaging.

Differential Lock/Unlock shall be a multi-disc design.

Final drive shall be a planetary design

Machine shall be equipped with electronic over-speed protection to prevent the engine and transmission from over speeding, as a standard feature.

A programmable auto-shift transmission option shall be available.

Electronic Throttle Control (cruise control) shall be available, and shall be controlled by a push button, located on the right-hand joystick control for resuming and decreasing throttle set.

The Electronic Throttle Control modes, set and accelerate functions, shall be located on the right control column for easy access.

Transmission shall be isolated/resilient mounted to reduce sound and vibration.

Transmission shall be capable of shifting gears or direction, by electronic control, under any load condition from idle to full power.

The unit must have a low effort, Pedal controlled, "inching" capability.

Minimum operating speeds in forward eight (8) gears shall be:

(MPH)	1st	2nd	3rd	4th	5th	6th	7th	8th
Forward:	2.3	3.2	4.6	6 .4	10.0	13.7	18.8	27.4

BIDDER'S RESPONSE

TRANSMISSION: (Cont.)

Reverse: 1.8 3.5 5.0 7.9 14.8 21.6

A single lever control shall control both gear selection and direction. The lever shall be mounted in a gated control box to prevent accidental shifting by operator error.

Transmission shall have complete transmission disconnect capability for towing.

A neutral start provision shall be included to prevent start up in gear.

The electronically controlled transmission must be equipped with a diagnostic connector.

Grader to be equipped with a Low effort, **Inching pedal** to deliver precise control of machine movements in any gear for finish grading.

BRAKES:

Service brakes shall be multi-disc, oil-cooled and completely sealed.

Service brakes shall be hydraulically actuated, utilizing dual independent brake circuits.

Service brake disc surfaces shall be grooved and carry oil between discs and plates with brakes fully applied

Entire braking system shall meet all requirements of ISO 3450.

Service brakes shall provide a minimum of 3,565 in^2 (23,000 cm^2) of total friction material surface area used at each of the four tandem wheels to eliminate braking loads on the power train.

Service brakes shall provide access to check and determine brake wear without removing or disassembling the brake assembly.

BIDDER'S RESPONSE

BRAKES: (Cont.)

Hydraulic brake accumulators shall be standard.

Parking brake shall be multi-disc, oil-cooled, spring-applied, hydraulically released, sealed, adjustment-free, and integrated into the transmission.

Parking brake shall be serviceable without removing the transmission

Engaged parking brake shall neutralize the transmission.

AIR BRAKE DRYER:

The dryer must have a spin on cartridge with replaceable desiccant. Reference: Bendix Model AD-IS.

HYDRAULIC SYSTEM:

Hydraulics system shall be a closed center, load sensing type, with a variable displacement, axial piston-type pump

Hydraulic implement pump shall produce between 0 and 55.4 gallon/min (210 L/min) of oil flow at high idle.

Implement valves shall be electro-hydraulic, designed and built by the machine manufacturer.

Implement valves shall be proportional priority pressure compensating for consistent response, when multi-functioning any combination of implement controls and independent of engine speed.

Lock valves shall be integrated into the main implement valve to prevent cylinder drift.

Blade lift cylinders shall have independent float capability, actuated by two, three-axis, multi-functioning, joystick controls inside the cab, as a standard feature.

BIDDER'S RESPONSE

HYDRAULIC SYSTEM: (Cont.)

There shall be a provision to install up to fifteen modulating hydraulic valves, controlled by two, three-axis, multi-functioning, joystick controls and auxiliary controls inside the cab.

Hydraulic valves shall not be mounted under the cab floor, to minimize sound and vibration.

Implement pump shall not be mounted under cab floor, minimizing sound and vibration.

Implement pump shall be solely dedicated to implement controls and not shared with any other components.

Hydraulic system shall be fully sealed, using Duo-cone and O-ring seals to prevent contamination and spillage.

Hydraulic system shall have a separate oil tank, solely dedicated to the implement pump. Standard hydraulic tank capacity shall not be less than 15.9 gallons (60 L).

The hydraulic tank shall have a baffling system to reduce potential pump cavitation.

A standard triple redundant hydraulic relief system shall protect machine hydraulic components.

All implement hydraulic connections shall have O-ring face seals for leak prevention.

The maximum hydraulic system pressure shall be no more than 3,500 psi (24,150 kPa).

The hydraulic stand-by pressure shall be no more than 450 psi (3100 kPa).

TANDEM AND FINAL DRIVE:

Front axle shall be an arched design for maximum ground clearance.

Front axle oscillation shall be no less than 32 degrees total, per side 16 degrees up, 16 degrees down

BIDDER'S RESPONSE

TANDEM AND FINAL DRIVE: (Cont.)

Front wheel steering angle shall be no less than 50 degrees left or right.

Front wheel spindle bearings shall be a double tapered design with the larger diameter bearing mounted closest to the centerline of the front tire.

Front wheel spindle maintenance intervals shall be no less than 2000 hrs.

Wheel spindle shall be a "live" spindle design and rotate inside a sealed compartment with lightweight oil for lubrication of the bearings.

Front spindle shall be heat induction hardened.

Electronic and mechanical steering stops located at each wheel and steering cylinder relief valves shall be present to prevent steering system damage during normal operation.

Maximum front wheel lean shall be no less than 17.1 degrees left or right.

Machine turning radius shall not exceed 25.4 ft (7.7 m) using front steering, full articulation and unlocked differential.

Steering tie rod ends shall be heat induction hardened

Tandem chain pitch shall not be less than 2.0 in (50.8 mm).

Distance between centers of tandem wheels shall be no less than 60 in (1523 mm).

Tandems shall be capable of oscillating 15 degrees front tandem up and 25 degrees front tandem down, with full machine articulation and having no interference between tandem wheel and machine structure.

Standard tandem housing capacity shall not be less than 16.9 gallons (64 L) each.

BIDDER'S RESPONSE

TANDEM AND FINAL DRIVE: (Cont.)

Standard front wheel spindle bearing housing capacity shall not be less than 0.24 gallons (0.9 L)

Standard circle drive housing capacity shall not be less than 1.8 gallons (7 L)

Final Drive Oil capacity 12.4 gallons.

Tandem housing capacity 16.9 gallons each.

Overall Dimensions:
Width outside front tires: 97 inches.

Height top of Cylinders: 119.2 inches.

Ground clearance at the transfer case: 13.5 inches.

Overall length counter Scarifier to rear ripper: 398 inches.

Front axle to moldboard: 100.8 inches.

Steel tandem walkways with steps that comply with Cal-Osha regulations.

ALL WHEEL DRIVE SYSTEM:

All Wheel Drive system shall be useable 1st through 7th forward and 1st through 5th reverse gears.

All Wheel Drive (AWD) system shall be available and provide a constant net horsepower (HP) to the tandems by increasing gross HP up to 35HP (26KW) when AWD is engaged.

All Wheel Drive system – Each front wheel shall be powered utilizing a dedicated variable axial piston pump and variable axial piston motor.

Both pumps and motors shall be infinitely variable to provide maximum torque in every gear.

BIDDER'S RESPONSE

ALL WHEEL DRIVE SYSTEM: (Cont.)

All Wheel Drive system shall automatically vary individual front wheel speeds by up to 50% during a turn, improving front wheel traction and reducing turning radius.

All Wheel Drive system shall produce a max torque of no less than 10,325 lb ft. (13,998 Nm).

All Wheel Drive system shall provide a hydrostatic front wheel drive only mode neutralizing the transmission for precise low-speed performance. The ground speed shall be infinitely variable between 0 and 5 mph (8 km/h)

DRAWBAR, CIRCLE & MOLDBOARD:

Moldboard shall have a bank slope angle capability of at least 90 degrees to both sides.

There will be no more than 6 replaceable wear inserts between the circle and drawbar providing at least 163 in^2 (1051 cm^2) of wear surface area.

Drawbar wear strips shall be replaceable drop-in inserts, made from nylon composite material.

Circle and drawbar vertical adjustment points shall be accessible from the top of the drawbar, for ease of maintenance.

Circle outside diameter shall be no less than 60.2 in (1530 mm).

Circle shall be a single piece, rolled-ring forging, with raised wear surfaces on the top and bottom.

Circle shall be rotated by a hydraulically driven motor with a minimum circle pinion torque capability of 44253 ft-lb (60,000 N-m).

Circle teeth contact surfaces shall be induction-hardened on the front 240 degrees of the circle.

BIDDER'S RESPONSE

DRAWBAR, CIRCLE & MOLDBOARD: (Cont.)

Moldboard side-shift cylinder shall be installed on the left-hand side.

Moldboard shall have a hydraulic tip shift control through a range of 40 degrees fore and 5 degrees aft.

A 14 ft (4267 mm) long, 27 in (685 mm) high and no less than 1in (25 mm) thick moldboard shall be available.

Moldboard slide rails shall be constructed of a heat-treated, high carbon steel.

Slide rails shall be hardened, continuously welded, and have replaceable bronze-alloy wear inserts top and bottom.

Moldboard wear strips shall be adjusted with lock screws, providing shim-less adjustment capability both vertical & horizontal.

Throat clearance with standard moldboard shall be at least 6.5 in (166 mm).

Blade lift and center shift cylinders shall have replaceable bronze-alloy wear inserts in the ball sockets with removable shims to insure the ability to remove free play throughout the useful wear insert life.

Link bar shall have 7 positions for increased versatility.

The moldboard retention system shall have two retention points located on the left and right side of the moldboard. The surface area shall not be less than 50408 mm^2 (78.13 in^2)

The drawbar shall feature welded protective wear plates to prevent lift group contact with the primary drawbar structure.

BIDDER'S RESPONSE

HYDRAULIC STEERING PRIORITY:

Steering circuit to take priority over implement circuits.

JOYSTICK STEERING:

Machine, Drawbar, Circle, and Moldboard shall be controlled with a maximum of two multifunction, 3-axis, joysticks, as standard.

Joystick controls shall be mounted to adjustable pedestals, hard mounted to the cab floor, independent of the operator seat.

Primary steering shall be achieved via a left hand, multifunction, 3- axis, joystick as standard. Using an intuitive steering control system, that automatically adjusts steering sensitivity as machine ground speed increases.

Steering capabilities shall be ISO5010.

Secondary steering shall be a standard feature.

Steering wheel shall not be required to operate machine

An articulation return-to-center button on the multifunction, 3- axis, joysticks shall return the machine to a straight frame position from any articulation angle with the touch of a single button.

CAB:

Key start, with starting in gear lockout prevention.

Single key security.

Lighted status display panel with the following:

Fuel gauge.

"Hobbs" Hour meter (oil pressure activated)

Articulation indicator

BIDDER'S RESPONSE

CAB: **(Cont.)**

Electronic status monitoring system with visual and audible warnings for critical systems:

Cab shall be isolation-mounted to the front frame section of the machine.

Cab doors shall have a hold-open clasp with a ground-level release and in addition to, a release in the cab.

Cab shall have wipers with washers on the doors, front and rear windows.

Wipers shall be available on side windows.

Left and right side cab doors shall be available.

Operator cab fresh air-filter shall be accessible for clean out and replacement, from outside of the cab at ground level.

A HVAC pre-cleaner air filter shall be available to increase the life of the fresh air filter.

A 42,075 BTU/h (12.3 kW) heater with integral pressurized and four-speed fan shall be available.

Machine shall have no less than 19 adjustable vents, positioned to direct air to front windows and operator

Auxiliary controls shall be available for control of attachment implements and/or work tools, and shall be programmable via computer software.

Auxiliary controls shall be a finger-tip control type and located beside the right-hand joystick control.

An auxiliary control pod, with implement float control capability.

BIDDER'S RESPONSE

CAB: **(Cont.)**

An electronic message system shall provide real-time machine performance and diagnostic data.

An instrument cluster shall be provided that includes a speedometer, tachometer, coolant temperature, fuel and articulation angle gauge.

An air suspension seat shall be available.

Seat shall be a cloth-covered suspension seat with, 3-inch (76 mm) retractable seat belts, with adjustments for fore-aft position, seat height, seat back angle, thigh support, and lumbar support.

Radio ready arrangement including 24V to 12V converter, two speakers, antenna and wiring shall be available.

AM/FM Radio with CD MP3 player shall be provided.

Machine shall have the AccuGrade™ system fully integrated into the machine design with integral hydraulic and electrical components as standard.

AccuGrade™ automatic blade control system attachment ready option shall be available from the factory. This option shall Include additional mounting brackets and electrical harnesses for easy installation of the electronics kit.

A real-time information system shall monitor all system data and alert the operator of any faults through a digital text display. This information system shall be programmable for multiple languages.

A toolbox shall be provided; information on location shall be furnished by vendor.

Cab shall have angled floor design allowing direct visibility to moldboard.

BIDDER'S RESPONSE

CAB: (Cont.)

The cab shall be:

Cab shall be low profile pressurized equipped with both air conditioning and heater / defroster functions. Dual Fresh air system with a top height of 123" inches.

ROPS to meet SAE J396, SAE J1040, APR 88, ISO 3471:1986, ISO 3471:1974.

Falling Object Rating, FOPS: SAE J231, Jan 81, ISO 3449:1984, ISO 3449:1992 Level II.

12 VDC power tap port.

Vertical grab handles, full height for safe cab entry.

Shall be equipped with an operator presence system that keeps the parking brake engaged and hydraulic implements disabled until the operator is seated in the machine.

Shall be equipped with heavy duty electric **windshield wipers** front, single top and twin bottom wipers with a single rear wiper.

Dual Cab Steps or ladders, flex mounted on both sides of the cab for ergonomic egress on either side, with grab handles to provide operator with easy access to the cab.

Steps shall be nonslip type "Grip Strut" or Department approved equal. 18 inch maximum step height. Flex mount rung stirrups to prevent damage. Cable type rope ladders will be unacceptable.

Cab installation shall meet ROPS and FOPS criteria in accordance with Section 1596 of the State of California Construction Safety Orders. In addition, structure shall meet all Cal/OSHA, OSHA, and MSHA requirements. The following additional features shall be included in the cab:

BIDDER'S RESPONSE

ADDITIONAL FEATURES:

Emergency exit hammer.

Night time cab lights.

Inside rear view mirror (Wide Angle).

Fan defroster.

Cab sun shade.

Cab sound suppression.

Rear rippers shall be provided.

Rear ripper shall have five ripper shank holders and 7 scarifier shank holders. Scarifiers shall be mounted at mid-section; straight scarifiers, not angled.

Rear ripper shall have a working penetration of maximum 16.8 in (428 mm) and a penetration force of at least 17, 740 lb (8047 kg)

The front scarfier shall be straight type, mid mounted @ 71" working width.

A front lift group shall be available

A front scarifier and mid-mount scarifier shall be furnished.

Snap-on louver covers for hood and side louvers shall be available. Shall include mesh covers to protect against airborne debris.

Rear fenders shall meet ISO-3457 requirements and shall not interfere with the ability to fully open any cab or engine enclosure, or service access doors.

Steel Tandem Covers with perforated raised steel walkways. They shall provide a sturdy platform for standing and walking as well as protecting the brake lines.

BIDDER'S RESPONSE

ADDITIONAL FEATURES: (Cont.)

An integrated communication tool providing flow of vital machine data and location shall be available. This system shall give automatic updates on machine parameters such as machine hours, machine condition, location, fault codes and alarms.

All core machine systems shall be electronically connected optimizing performance and preventing machine damage

An optional air compressor shall be available; vendor shall contact County on size, make and model.

Approved, reflectorized "slow moving vehicle triangle emblem," permanently mounted at rear of motor grader to be clearly visible when following unit.
Reference Grote: Model 71152

Oil sampling and analysis kit with prepaid mailers kit shall provide twelve (12) sample test kits.

Special wrenches shall be supplied with the unit as recommended by the manufacturer. If wrenches are required to repair/ adjust the tractor, a complete set shall be supplied by the vendor. Supplied wrenches shall be hardened chromoly steel with hard chrome or black oxide finish. Tools must be top quality, name brand, domestic tools with **a life-time warranty** from the tool Manufacture.

Five (5) ignition keys and five (5) door keys.
Installed AM/FM CD Radio with Weatherband and installed with speakers.

License plate holder with approved light.

Machine shall have no drive shafts that cross over the articulation hitch.

Rear view camera and monitor system; vendor shall provide make and model of system to bid.

BIDDER'S RESPONSE

ADDITIONAL FEATURES: (Cont.)

Shall be equipped with a hydraulic lockout system to disable all implement functions while continuing to provide machine steering controls.

Ground level electronically shutoff switch for emergency shut down.

VANDALISM PROTECTION COVERS:

Unit must be provided with a complete set of solid, custom fitted, lockable, vandalism prevention covers for all windows. Lighting fixtures must be equipped with rock guard covers. Covers to be key lockable. Each cover is to be of Aluminum and the set must protect every window on and access to the cab of the Grader. Each cover is to be equipped with two (2) grab handles of stainless steel.

The covers shall be boxed and lipped to form a 1.5 inch depth, minimum and completely welded to afford glass protection from Graffiti and thrown projectiles. The seating edge of the cover shall be solid rubber strip fastened to a .5 inch lip, affording a padded surface to protect the finish. The finish may be natural aluminum.

The goal is to provide robust protection for the grader, safety and convenience for the operators. Composite materials that afford lighter weight and equal or better vandal protection may be considered as an alternate.

HEATED EXTERIOR MIRRORS:

Heated exterior Mirrors, left and right side, outside mounted.

Martin, I am listing the tires at the end; please select the tires which will be required.

BIDDER'S RESPONSE

TIRES AND RIMS:

A 10 in (25.4 cm) by 24 in (60.96 cm) size 3-piece tire rim shall be available to provide mounting for 14.00-24 conventional tires.

WARRANTY:

The warranty period, terms and conditions, for this unit, and all provided accessories and attachments, shall be equal to the manufacturers standard warranty, or one (1) full year from the date the unit enters service with the County of Los Angeles. (Whichever is longer).

Coverage shall include warranty against defects in materials or workmanship including all necessary parts, labor and transportation during the term of the warranty.

This shall include vendor's travel time to, and from, the site of warranty work, shipping and transportation of all parts and labor required to honor the warranty.

The unit(s) described in these specifications may be used by the Department in all weather conditions under possible 24- hour a day operation. This service is acknowledged to be severe and to impose extreme demands upon this unit and its components.

The supplier of any equipment pursuant to these specifications shall therefore be advised of the possibility of severe work conditions in this service.

Warranties may exclude failure caused by physical abuse, or lack of proper maintenance and physical damage from external sources.

The unit is to be delivered with warranty documentation for the complete unit including all components installed.

BIDDER'S RESPONSE

WARRANTY: (Cont)

The County of Los Angeles will operate and maintain said equipment in accordance with the manufacturer's standard service manual, provided with the unit at time of delivery.

Service directives and updates to the contents of the manuals must be provided at no cost during the warranty period.

The truck's warranty shall be unconditional three (3) years 36,000 miles parts and labor from the date the vehicle is placed in service. All other components shall be unconditional one (1) year, unlimited miles or manufacturers standard warranty (whichever is longer) from the date the equipment is placed in service.

Warranty may exclude filters, normal replacement items, and physical damage from external sources.

ENGINE EMISSION WARRANTY:

The engine and its emission controls, shall meet all California requirements for five (5) years or 100,000 miles from the date the vehicle is placed in service. This shall include all parts and labor.

FRONT AXLE, TRANSMISSION, DRIVE LINES AND REAR AXLES, WARRANTY:

Shall be warranted for three (3) years or 36,000 miles of operation for defects due to defective workmanship or materials. This warranty shall include all parts and labor needed to repair any component listed in the warranty.

BIDDER'S RESPONSE

EXTENDED WARRANTY QUOTE:

If extended warranties are available from the vehicle's **MANUFACTURER**, please quote available extended warranty options here: Any additional cost for an extended warranty will NOT be considered in determining the lowest responsible bid.

_____

_____

DELIVERY:

Deliver the vehicle to:
Andy Navarro
Los Angeles County Department of Public Works
Equipment inspection office
11282 Garfield Avenue
Downey, Ca 91782
Telephone: (626) 869-9312

SPECIFICATIONS PREPARED BY:

Frank V. Solano
Power Equipment Specification Writer
Los Angeles County Department of Public Works
900 So. Fremont Avenue
Alhambra, California 91802
Telephone: (626) 458-7307
Fax: (626) 979-5401

NOTES:

NOTES:

NOTES:

AWARDED VENDOR TO SUPPLY A LIST OF CAPACITIES INCLUDING FUEL, LUBRICANTS, COOLANT. IN ADDITION TO KEY CODES, FILTER NUMBERS, TIRE

SIZES